

L Number	Hits	Search Text	DB	Time stamp
-	25	schottland-philippe.in. schottland-p.in. sivakumar-krishnamoorthy.in. sivakumar-k.in. dhalla-adil-minoo.in. dhalla-a.in. sait-meerakani-mohamed-ali.in. sait-m.in.	EPO; JPO; DERWENT; IBM_TDB	2004/10/25 13:31
-	24	schottland-philippe.in. schottland-p.in. sivakumar-krishnamoorthy.in. sivakumar-k.in. dhalla-adil-minoo.in. dhalla-a.in. sait-meerakani-mohamed-ali.in. sait-m.in. (schottland-philippe.in. schottland-p.in. sivakumar-krishnamoorthy.in. sivakumar-k.in. dhalla-adil-minoo.in. dhalla-a.in. sait-meerakani-mohamed-ali.in. sait-m.in.) and \$anthraquinone	USPAT; US-PPGPUB	2004/10/22 14:07
-	6	(schottland-philippe.in. schottland-p.in. sivakumar-krishnamoorthy.in. sivakumar-k.in. dhalla-adil-minoo.in. dhalla-a.in. sait-meerakani-mohamed-ali.in. sait-m.in.) and \$anthraquinone	USPAT; US-PPGPUB	2004/10/22 13:13
-	8526	\$anthraquinone	DERWENT	2004/10/22 13:52
-	627	\$aminoanthraquinone	DERWENT	2004/10/22 13:53
-	21	\$aminoanthraquinone and (polycarbonate carbonate)	DERWENT	2004/10/22 13:58
-	6	\$diaminoanthraquinone and (polycarbonate carbonate)	DERWENT	2004/10/22 13:59
-	38	"1,8-diaminoanthraquinone" and (polycarbonate carbonate)	USPAT; US-PPGPUB	2004/10/22 16:06
-	163	524/358.ccls.	USPAT; US-PPGPUB	2004/10/22 14:07
-	24	524/358.ccls. and polycarbonate	USPAT; US-PPGPUB	2004/10/22 16:53
-	39	3635895.pn. 3697395.pn. 3697402.pn. 3768976.pn. 3880869.pn. 4001184.pn. 4179548.pn. 4217438.pn. 4220707.pn. 4332880.pn. 4404257.pn. 4491508.pn. 4523208.pn. 5368988.pn. 5558808.pn. 5620839.pn. 5753413.pn. 5815484.pn. 5882358.pn. 6011772.pn. 3136347.pn. 6168844.pn. 6228440.pn. 6338933.pn. 6475588.pn. 6475589.pn. 4891800.pn. 3923454.pn. 4571605.pn. 6117284.pn. 5583047.pn. 3507606.pn. 3646071.pn. 4123396.pn. 5530083.pn. 3979459.pn. us-20030002431-\$.did. us-20030205323-\$.did. us-20030198892-\$.did.	USPAT; US-PPGPUB	2004/10/25 09:26
-	15	("1,8-diaminoanthraquinone" "1,8-diamiono" adj anthraquinone) and (polycarbonate carbonate near2 resin) "1,2-anthraquinone"	USPAT; US-PPGPUB	2004/10/22 16:09
-	65	"1,2-anthraquinone"	USPAT; US-PPGPUB	2004/10/22 16:10
-	0	"1,2-anthraquinone".ab.	USPAT; US-PPGPUB	2004/10/22 16:10
-	5	"1,2-anthraquinone".clm.	USPAT; US-PPGPUB	2004/10/22 16:20
-	2	jp-2003268110-\$.did.	JPO; DERWENT	2004/10/22 16:28
-	1	5252546.pn.	USPAT	2004/10/22 16:35
-	1	bis adj cyclohexylamino adj (anthraquinone) bis adj cyclohexylaminoanthraquinone	USPAT	2004/10/22 16:36
-	46	524/358.ccls. and \$anthraquinone	USPAT; US-PPGPUB	2004/10/22 17:06
-	17	524/358.ccls. and \$anthraquinone and polycarbonate	USPAT; US-PPGPUB	2004/10/22 17:06
-	4	5882358.URPN.	USPAT	2004/10/22 17:09
-	3	("4999418" "5882358" "6447591").PN.	USPAT	2004/10/22 17:17

	32	("Re16937" "0659565" "2046365" "2100392" "2757064" "2848462" "2925333" "3164449" "3435054" "3476500" "3597254" "3640872" "3770640" "3852205" "3883568" "3915871" "3915999" "3960751" "4170564" "4303407" "4369120" "4436641" "4702561" "4735631" "4758366" "4764290" "4764474" "4904765" "5145573" "5149453" "5205840" "5372735"). PN.	USPAT	2004/10/23 13:05
	19	(("Re16937" "0659565" "2046365" "2100392" "2757064" "2848462" "2925333" "3164449" "3435054" "3476500" "3597254" "3640872" "3770640" "3852205" "3883568" "3915871" "3915999" "3960751" "4170564" "4303407" "4369120" "4436641" "4702561" "4735631" "4758366" "4764290" "4764474" "4904765" "5145573" "5149453" "5205840" "5372735"). PN.) and \$anthraquinone	USPAT	2004/10/22 17:29
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	0	bis adj cyclohexylaminoanthraquinone	USPAT; US-PPGPUB	2004/10/22 17:33
	13	dialkylamino adj anthraquinone dialkylanthraquinone	USPAT; US-PPGPUB	2004/10/22 17:34
	7	\$aminoanthraquinone and polycarbonate	DERWENT	2004/10/22 17:39
	1	4863634.pn.	USPAT	2004/10/22 17:39
	1	4863634.URPN.	USPAT	2004/10/22 17:39
	178	\$aminoanthraquinone and resin and mold\$	USPAT; US-PPGPUB; EPO; JPO; DERWENT; IBM TDB	2004/10/23 12:28
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	1	\$aminoanthraquinone and resin and mold\$	EPO; JPO	2004/10/23 12:28
	177	\$aminoanthraquinone and resin and mold\$	USPAT; US-PPGPUB	2004/10/23 12:28
	3	\$aminoanthraquinone.ab. and resin and mold\$	USPAT; US-PPGPUB	2004/10/23 12:30
	75	\$diaminoanthraquinone and resin and mold\$	USPAT; US-PPGPUB	2004/10/23 12:40
	0	1,8-diaminoanthraquinone and resin and mold\$	USPAT; US-PPGPUB	2004/10/23 12:31
	2	5484856.URPN.	USPAT	2004/10/23 12:38
	342	\$anthraquinone adj dye and polycarbonate and mold\$	USPAT	2004/10/23 13:05
	1	\$anthraquinone adj dye.ab. and polycarbonate and mold\$	USPAT	2004/10/23 13:06
	31	\$anthraquinone.ab. and polycarbonate and mold\$	USPAT	2004/10/23 13:06
	6	(3635895.pn. 3697395.pn. 3697402.pn. 3768976.pn. 3880869.pn. 4001184.pn. 4179548.pn. 4217438.pn. 4220707.pn. 4332880.pn. 4404257.pn. 4491508.pn. 4523208.pn. 5368988.pn. 5558808.pn. 5620839.pn. 5753413.pn. 5815484.pn. 5882358.pn. 6011772.pn. 3136347.pn. 6168844.pn. 6228440.pn. 6338933.pn. 6475588.pn. 6475589.pn. 4891800.pn. 3923454.pn. 4571605.pn. 6117284.pn. 5583047.pn. 3507606.pn. 3646071.pn. 4123396.pn. 5530083.pn. 3979459.pn. us-20030002431-\$did. us-20030205323-\$did. us-20030198892-\$did.) and mold\$ and pellet	USPAT; US-PPGPUB	2004/10/25 09:31
	1	4863634.pn.	USPAT; US-PPGPUB	2004/10/25 10:31

-	31	low adj molecular adj weight with polycarbonate with optical 524/611.cccls.	USPAT; US-PGPUB USPAT; US-PGPUB USPAT; US-PGPUB	2004/10/25 10:56
-	472			2004/10/25 11:02
-	11	524/611.cccls. and \$anthraquinone		2004/10/25 12:37

Ron 10/619,643

10/25/2004

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FILE 'LREGISTRY' ENTERED AT 08:44:55 ON 25 OCT 2004
ACTIVATE RON643/L

L1 STR

L2 STRUCTURE

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L4 471 S L3 FUL

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SAVE L4 RON643C/A

FILE 'LREGISTRY' ENTERED AT 08:55:13 ON 25 OCT 2004
L5 STRUCTURE L2
SAV L5 RON643D/L

FILE 'REGISTRY' ENTERED AT 08:58:30 ON 25 OCT 2004
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L7 11 S L5 SSS FUL SUB=L4
SAVE L7 RON643E/A

FILE 'HCA' ENTERED AT 09:03:46 ON 25 OCT 2004
L8 8 S L7

FILE 'LREGISTRY' ENTERED AT 09:06:12 ON 25 OCT 2004
L9 STRUCTURE L2
L10 STR L9

FILE 'REGISTRY' ENTERED AT 09:14:32 ON 25 OCT 2004
ACTIVATE RON643/L

L11 STR

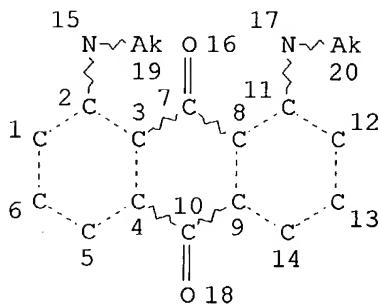
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L14 STR L13

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L17 0 S L10
L18 12 S L10 FUL
SAV RON643F/A L18

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L20 11 S L19 AND 1907-2003/PY,PRY

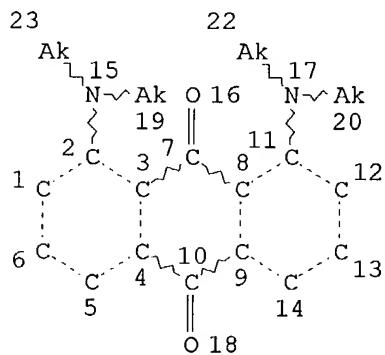
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L2 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE
L4 471 SEA FILE=REGISTRY SSS FUL L2
L5 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 22

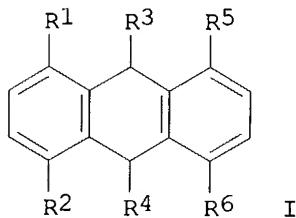
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L7 11 SEA FILE=REGISTRY SUB=L4 SSS FUL L5
L8 8 SEA FILE=HCA ABB=ON PLU=ON L7

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L8 ANSWER 1 OF 8 HCA COPYRIGHT 2004 ACS on STN
135:46452 Preparation of aminoanthracenediones and amino acid and peptide conjugates thereof as anticancer and antimicrobial agents.. Mincher,
David John; Turnbull, Agnes; Kay, Graeme Gillies (BTG International)

Limited, UK). PCT Int. Appl. WO 2001044190 A1 20010621, 77 pp.
 DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ,
 CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
 HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,
 LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG,
 SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ,
 BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY,
 DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE,
 SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2000-GB4829
 20001215. PRIORITY: GB 1999-29801 19991216.

GI



AB Use of title compds. [I; ≥ 1 of R1, R2, R5, R6 = AB, the others = H, OH, alkoxy, acyloxy, AB = Z(R7)nXY; R7 = divalent organic radical; n = 0, 1; R3, R4 = H, OH, O; A = Z(R7)nX; X = O, NH, CO; B = amino acid residue, peptide group, or isostere thereof; Y = H, capping group; Z = amino group incorporating a (substituted) heterocyclic or carbocyclic ring] or a physiol. acceptable derivative of such compound for the manufacture of a medicament

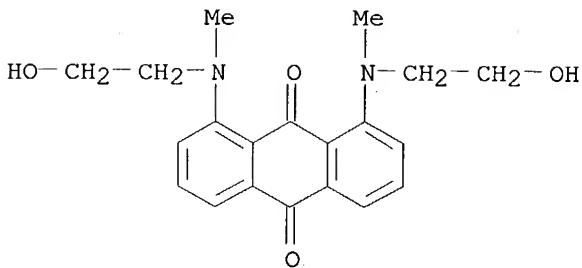
for the treatment of cancers or microbial infections having cells exhibiting topoisomerase I is claimed. Thus, trans-1,4-diaminocyclohexane reacted with 1-chloroanthraquinone to give 1-[4-aminocyclohexyl]aminoanthracene. The latter was coupled with N-tert-butoxycarbonyl L-4-chlorophenylalanine N-hydroxysuccinimide followed by deprotection to give (2S)-2-amino-N-[4-[(9,10-dioxoanthryl)amino]cyclohexyl]-3-(4-chlorophenyl)propionamide trifluoroacetate. This inhibited MAC15 colon adenocarcinoma with IC₅₀ = 1.0 μ M.

IT 345265-61-4P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (preparation of aminoanthracenediones and amino acid and peptide conjugates thereof as anticancer and antimicrobial agents)

RN 345265-61-4 HCA

CN 9,10-Anthracenedione, 1,8-bis[(2-hydroxyethyl)methylamino]- (9CI) (CA INDEX NAME)



IC ICM C07D211-46
ICS A61K031-4409; C07D295-10; C07D207-16; A61P039-00
CC 34-2 (Amino Acids, Peptides, and Proteins)
Section cross-reference(s): 1

IT 2944-14-1P 122482-20-6P 252681-80-4P 252681-82-6P 252683-34-4P
252683-36-6P 252683-40-2P 252683-42-4P 345265-55-6P 345265-56-7P
345265-57-8P 345265-59-0P 345265-60-3P **345265-61-4P**
345265-62-5P 345265-64-7P 345265-65-8P 345265-67-0P 345265-68-1P
345265-70-5P 345265-71-6P 345265-73-8P 345265-74-9P 345265-76-1P
345265-78-3P 345265-80-7P 345265-81-8P 345265-83-0P 345265-84-1P
345265-86-3P 345265-87-4P 345265-89-6P 345265-91-0P 345265-93-2P
345265-94-3P 345265-96-5P 345265-97-6P 345265-99-8P 345266-00-4P
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345266-40-2P 345266-42-4P 345266-43-5P 345266-45-7P 345266-47-9P
345266-49-1P 345266-51-5P 345266-53-7P 345266-54-8P 345266-56-0P
345266-58-2P 345266-60-6P 345266-61-7P 345266-63-9P 345266-64-0P
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345266-72-0P 345266-74-2P 345266-75-3P 345266-77-5P 345266-79-7P
345266-80-0P 345266-82-2P 345266-83-3P 345266-85-5P 345266-87-7P
345266-88-8P 345266-90-2P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of aminoanthracenediones and amino acid and peptide conjugates thereof as anticancer and antimicrobial agents)

L8 ANSWER 2 OF 8 HCA COPYRIGHT 2004 ACS on STN
111:234998 Blended green disperse dye formulation with increased dyeing concentration. Pokhila, Z. V.; Kozhushkova, L. I.; Revenko, L. G.; Kolodyazhnyi, V. I.; Lysun, N. V.; Beskakotova, A. D. (USSR). U.S.S.R. SU 1479478 A1 19890515 From: Otkrytiya, Izobret. 1989, (18), 98-9. (Russian). CODEN: URXXXAF. APPLICATION: SU 1986-4128115 19860730.

AB The com. form of a blended, disperse green dye contains 2-hydroxy-5-methyl-4'-acetaminoazobenzene (I), an aminoanthraquinone-type disperse blue dye, NF dispersant (based on a mixture of the Na salts of dinaphthylmethanesulfonic acids and dinaphthylmethanedisulfonic acids), SS dispersant (based on a reaction product of a 2-naphthol-6-sulfonic acid salt with a mixture of o- and p-cresols), and a polyethylsiloxane liquid. The dyeing concentration is increased by using 1,8-dihydroxy-4,5-dimethylaminoanthraquinone (II) as the blue dye, and by also adding 1,4-diaminoanthraquinone and isobutylnaphthalenesulfonate to the title dye mixture. An exemplary disperse green dye composition contains I 19.0-26.0, II

7.0-12.3, 1,4-diaminoanthraquinone 3.6-7.0, NF dispersant 36.3-52.3, SS dispersant 4.0-25.0, polyethyilsiloxane liquid 0.1-2.0 weight%, and the balance being isobutylnaphthalenesulfonate.

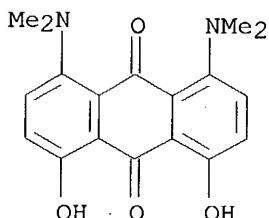
IT 123853-81-6

RL: USES (Uses)

(blended disperse green dye formulations containing)

RN 123853-81-6 HCA

CN 9,10-Anthracenedione, 1,8-bis(dimethylamino)-4,5-dihydroxy- (9CI) (CA INDEX NAME)



IC ICM C09B067-22

CC 40-6 (Textiles and Fibers)

IT 128-95-0, 1,4-Diaminoanthraquinone 2832-40-8 80137-59-3D, salts

123853-81-6

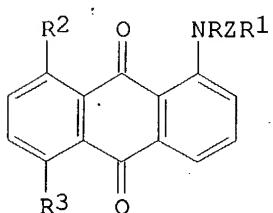
RL: USES (Uses)

(blended disperse green dye formulations containing)

L8 ANSWER 3 OF 8 HCA COPYRIGHT 2004 ACS on STN

96:105805 Process for the separation of anthraquinone compounds using fractional crystallization. Wright, Paul William; Wade, John Robert (Yorkshire Chemicals Ltd., UK). Brit. UK Pat. Appl. GB 2060670 A 19810507, 9 pp. (English). CODEN: BAXXDU. APPLICATION: GB 1979-35317 19791011.

GI



I

AB α,α' -Disubstituted anthraquinones I [R = H, optionally substituted (o.s.) alkyl, o.s. cycloalkyl, o.s. aryl; R1 = o.s. alkyl, o.s. cycloalkyl, o.s. aryl; Z = CO, SO, SO₂; R2, R3 = H, NRZR1; R2 ≠ R3], useful as dye intermediates, are separated from mixts. containing α -mono- and α,β -disubstituted anthraquinones by fractional crystallization from an organic solvent. The process is especially useful for treating waste liquors from separation of the majority of 1,5- and 1,8-anthaquinonedisulfonic acids formed by conventional Hg-catalyzed disulfonation of anthraquinone: the waste liquors are halogenated to give mixts. containing mono- and dihaloanthraquinones which are then

α -acylated and the resultant mixture is separated by fractional crystallization

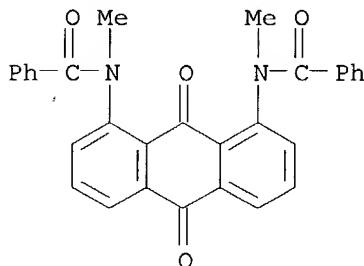
Thus, 62.2 parts of a mixture of 1,6-di- 35-40, 1,7-di- 35-40, 1,5-di- 8-12, 1,8-di- 8-12, and α -monochloroanthraquinone 1-5% was heated 24 h at 210° with 150 parts 30% aqueous NH₃ and 450 parts H₂O to give 48.8 parts of a mixture containing 1,5- and 1,8-diaminoanthraquinone, 1-amino-6-chloroanthraquinone, 1-amino-7-chloroanthraquinone and 1-aminoanthraquinone. The mixture (43.8 parts) was stirred 1 h at 150° with PhNO₂, treated by dropwise addition during 1 h of 44.2 parts BzCl in 80 parts PhNO₂, and stirred a further 1 h at 150°. Crystallization during 16 h at room temperature gave 10.5 parts of a mixture of 1,5- (II) and 1,8-di(benzoylamino)anthraquinone (III). Concentration of the remaining liquor followed by dilution with MeOH gave 41.9 parts of a mixture comprising 1-(benzoylamino)-6-chloro 45, 1-(benzoylamino)-7-chloro- 48, 1-(benzoylamino)anthraquinone 4, and II and III 3%.

IT 79285-20-4P

RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of)

RN 79285-20-4 HCA

CN Benzamide, N,N'-(9,10-dihydro-9,10-dioxo-1,8-anthracenediyl)bis[N-methyl-(9CI) (CA INDEX NAME)]



IC C09B001-36

CC 41-9 (Dyes, Fluorescent Brighteners, and Photographic Sensitizers)

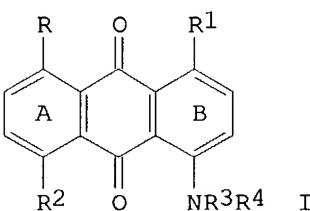
IT 82-18-8P 3571-23-1P 6337-17-3P 10114-51-9P 33522-40-6P
52868-94-7P 52869-23-5P 55868-85-4P 69658-00-0P 79285-15-7P
79285-16-8P 79285-17-9P 79285-18-0P 79285-19-1P 79285-20-4P
79285-21-5P 79285-22-6P 79285-23-7P 79285-24-8P 79285-25-9P

RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of)

L8 ANSWER 4 OF 8 HCA COPYRIGHT 2004 ACS on STN

91:194620 Anthraquinone dyes and process for their preparation and use.
Jackson, Malcolm Stewart; Greenwood, Robert; Potts, Rodney Martin
(Yorkshire Chemicals Ltd., UK). Brit. GB 1544627 19790425, 11 pp.
(English). CODEN: BRXXXAA. APPLICATION: GB 1975-17902 19760427.

GI



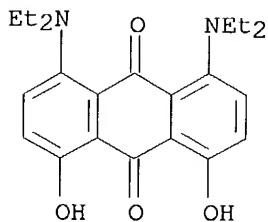
AB The preparation is described of title compds. I (R, R1, R2 = OH, NH₂, alkylamino, arylamino, dialkylamino, NO₂; R3, R4 = alkyl; further substitution on external rings and substituents optional, but excluding SO₃H or CO₂H). Thus, a dye comprising a mixture of I (R = R1 = OH, R2 = NEt₂, R3 = R4 = Et) [71876-40-9] and I (R = R1 = OH, R2 = NHET, R3 = R4 = Et) [71876-41-0], prepared by heating 1,8-dihydroxy-4,5-diaminoanthraquinone [128-94-9] with Et₂SO₄ (160-70°, 2 h), dyed polyester fibers light- and wet-fast green-blue with very good transfer printing properties.

IT 71876-40-9

RL: TEM (Technical or engineered material use); USES (Uses)
(dye, for polyester fibers, preparation of)

RN 71876-40-9 HCA

CN 9,10-Anthracenedione, 1,8-bis(diethylamino)-4,5-dihydroxy- (9CI) (CA INDEX NAME)



IC C09B001-00; D06P001-20

CC 40-5 (Dyes, Fluorescent Whiteners, Agents, and Photosensitizers)
Section cross-reference(s): 26

IT 13324-23-7 71876-31-8 71876-33-0 71876-34-1 71876-35-2
71876-36-3 71876-37-4 71876-38-5 71876-39-6 71876-40-9
71876-41-0

RL: TEM (Technical or engineered material use); USES (Uses)
(dye, for polyester fibers, preparation of)

L8 ANSWER 5 OF 8 HCA COPYRIGHT 2004 ACS on STN

84:59026 Reactions of chrysophanol with some derivatives of urea and thiourea.
Chumbalov, T. K.; Muzychkina, R. A.; Zhusupova, G. E.; Chanysheva, I. S.;
Rakhmadieva, S. B. (USSR). Khimiya I Khim. Tekhnol. (15), 67-71 From:
Ref. Zh., Khim. 1975, Abstr. No. 19E146 (Russian) 1974.

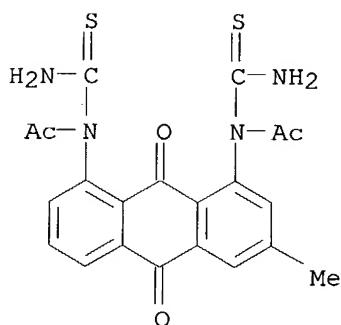
AB Title only translated.

IT 58255-62-2P 58255-67-7P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

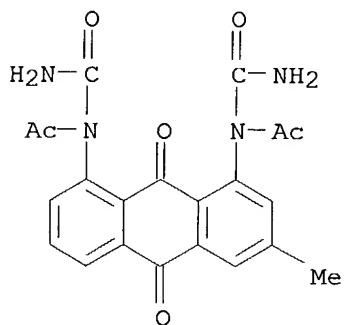
RN 58255-62-2 HCA

CN Acetamide, N,N'-(9,10-dihydro-3-methyl-9,10-dioxo-1,8-anthracenediyl)bis[N-(aminothioxomethyl)]- (9CI) (CA INDEX NAME)



RN 58255-67-7 HCA

CN Acetamide, N,N'-(9,10-dihydro-3-methyl-9,10-dioxo-1,8-anthracenediyl)bis[N-(aminocarbonyl)- (9CI) (CA INDEX NAME)



CC 26-5 (Condensed Aromatic Compounds)

IT 625-52-5P 58255-58-6P 58255-59-7P 58255-60-0P 58255-61-1P

58255-62-2P 58255-63-3P 58255-64-4P 58255-65-5P58255-66-6P **58255-67-7P**RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

L8 ANSWER 6 OF 8 HCA COPYRIGHT 2004 ACS on STN

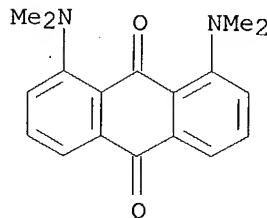
68:104824 Reactions in N, N-dimethylformamide. II. Halogen replacement in the anthraquinone series. Lord, William M.; Peters, Arnold Thornton (Univ. Bradford, Bradford, UK). Journal of the Chemical Society [Section] C: Organic (7), 783-5 (English) 1968. CODEN: JSOOAX. ISSN: 0022-4952.

GI For diagram(s), see printed CA Issue.

AB In the condensation of 1-chloroanthraquinone, I, with arylamines, the use of N,N-dimethylformamide as solvent can lead to the formation of 1-arylaminoanthraquinone, 1-alkylaminoanthraquinone, or mixts. thereof, depending on the basicity of the arylamine. 1-Chloroanthraquinone reacted with N,N-dimethylformamide with initial formation of 1-dimethylaminoanthraquinone: prolonged reaction resulted in demethylation and ultimate formation of 1-methylaminoanthraquinone. A similar replacement was observed with 2-chloro- and 1,2-, 1,4-, 1,5-, and 1,8-dichloroanthraquinones. Dealkylation of 1-dimethylaminoanthraquinone occurs in other dipolar aprotic solvents, e.g. dimethyl sulfoxide, but none occurs in comparatively high-boiling basic (e.g. β -picoline and pyridine) or neutral (e.g. ethylene glycol monomethyl ether) solvents. 27 references.IT **18084-42-9P**

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of)
 RN 18084-42-9 HCA
 CN Anthraquinone, 1,8-bis(dimethylamino)- (8CI) (CA INDEX NAME)



CC 26 (Condensed Aromatic Compounds)
 IT 82-38-2P 2987-66-8P 18084-33-8P 18084-35-0P 18084-36-1P
 18084-37-2P 18084-38-3P 18084-40-7P 18084-41-8P **18084-42-9P**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

L8 ANSWER 7 OF 8 HCA COPYRIGHT 2004 ACS on STN

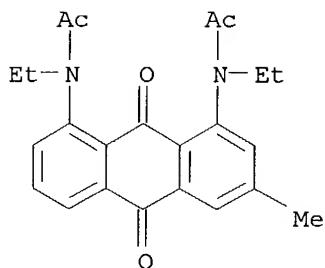
64:35673 Original Reference No. 64:6579d-f Transformations of natural anthraquinone pigments. I. Nitrogen-containing derivatives of chrysophanic acid. Chumbalov, T. K.; Muzychkina, R. A. Khim. Prirod. Soedin., Akad. Nauk Uz. SSR, 1965(5), 360-3 (Russian) 1965.

AB 4,5-Dihydroxy-2-methylanthraquinone (chrysophanic acid) (I) is obtained from the roots of Rumex tianschanicus. 4,5-Diamino-2-methylanthraquinone (II) was obtained by dissolving 2.54 g. I in 25 ml. concentrated NH4OH, adding 0.25 g. iron alum, 0.26 g. NH4Cl, and heating in an autoclave for 12 hrs. at 60-70°. The cherry-red solution was then acidified with HCl to neutral reaction and repeatedly extracted with ether to give 84.3% II, m. 258-60°; tetraacetyl derivative m. 190-2°. 9,10-Dioxime of I was obtained by refluxing I with NH2OH in alc., m. 117-21°, yield 70.4%; diacetyl derivative m. 96-8°. 9,10-Dihydrazone of I m. 95-7°; acetyl derivative m. 143-6°. 9,10-Bis(phenylhydrazone) of I m. 132-4°. 4,5-Bis(ethylamino)-2-methylanthraquinone (III) was obtained by heating I with a saturated alc. solution of EtNH2 for 5 hrs. at 70° and then keeping for 12 hrs., yield 67.2%, m. 108°; acetyl derivative m. 82-4°. 4,5-Bis(benzoylamino)-2-methylanthraquinone (IV) was obtained in 69.4% yield by treating II with BzCl in the presence of pyridine and K2CO3; m. 146-8°. Anilide of I m. 284-6°; acetyl derivative m. 184-7°. II has antitumor properties.

IT **4612-47-9**, Anthraquinone, 1,8-bis(N-ethylacetamido)-3-methyl-
5595-21-1, Diacetamide, N,N'-(3-methyl-1,8-anthraquinonylene)bis-
 (preparation of)

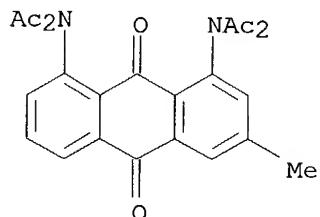
RN 4612-47-9 HCA

CN Anthraquinone, 1,8-bis(N-ethylacetamido)-3-methyl- (7CI, 8CI) (CA INDEX NAME)



RN 5595-21-1 HCA

CN Diacetamide, N,N'-(3-methyl-1,8-anthraquinonylene)bis- (7CI, 8CI) (CA INDEX NAME)



CC 36 (Condensed Aromatic Compounds)

IT 4612-43-5, Anthraquinone, 1,8-dihydroxy-3-methyl-, dioxime 4612-44-6,
 Anthraquinone, 1,8-dihydroxy-3-methyl-, dihydrazone 4612-45-7,
 Anthraquinone, 1,8-dihydroxy-3-methyl-, bis(phenylhydrazone) 4612-46-8,
 Anthraquinone, 1,8-bis(ethylamino)-3-methyl- **4612-47-9**,
 Anthraquinone, 1,8-bis(N-ethylacetamido)-3-methyl- 4612-48-0,
 Anthraquinone, 1,8-dianilino-3-methyl- 4612-49-1, Anthraquinone,
 3-methyl-1,8-bis(N-phenylacetamido)- 4614-16-8, Anthraquinone,
 1,8-diamino-3-methyl- 4627-15-0, Anthraquinone, 1,8-dibenzamido-3-methyl-
 4987-11-5, Hydrazine, 1,1'-(1,8-dihydroxy-3-methyl-9,10-
 anthracenediylidene)bis[2,2-diacetyl-, diacetate (ester) 5368-82-1,
 Acetic acid, (1,8-dihydroxy-3-methyl-9,10-anthracenediylidene)bis[phenylhy-
 drazole], diacetate (ester) **5595-21-1**, Diacetamide,
 N,N'-(3-methyl-1,8-anthraquinonylene)bis-
 (preparation of)

L8 ANSWER 8 OF 8 HCA COPYRIGHT 2004 ACS on STN

54:135311 Original Reference No. 54:25859e-h Dyes for dyeing acrylonitrile polymers and (or) copolymers. Braun, Willy; Stein, Hans W.; Federkiel, Wilhelm (Badische Anilin- & Soda-Fabrik Akt.-Ges.). DE 1047165 19581224 (Unavailable). APPLICATION: DE .

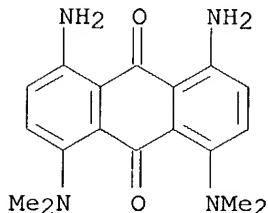
AB The title products are 1-dialkylamino-4-aminoanthraquinones that may be further substituted in the 5 and(or) 8 positions either by having both positions occupied by NH₂ groups or by having the 5 or 8 positions occupied by a NH₂ group and the 8 or 5 position, resp., by a dialkylamino group. The dialkylamino radicals of these anthraquinones have either the N atom attached to two equal or different low.-mol.-weight alkyl radicals, or the N atom is member of a saturated nucleus. The new compds. were obtained by replacing the halogen atoms of 1-halo-4-nitroanthraquinones by dialkylamino groups and subsequent reduction of the NO₂ groups. Thus, dyeing 100 parts of a fabric consisting of a 95% acrylonitrile 5% Bu methacrylate copolymer for 90 min. at boiling temperature in a bath containing

part of 1,5-bis(dimethylamino)-4,8-diaminoanthraquinone and 8 parts of the neutralized condensation product of naphthalene-2-sulfonic acid and HCHO in 4000 parts of H₂O gives strongly blue dyeings of very good light and wet resistance. Similar dyeings were obtained with the following anthraquinones (shades on polyacrylonitrile fibers given):
 1,8-bis(dimethylamino)-4,5-diaminoanthraquinone (deep blue);
 4-dimethylamino-1,8-diaminoanthraquinone (greenish blue), and
 1,5-bis(diethylamino)-4,8-diaminoanthraquinone (deep blue).

IT 109248-63-7, Anthraquinone, 1,8-diamino-4,5-bis(dimethylamino)-
 (manufacture of, and dyeing of acrylonitrile polymers therewith)

RN 109248-63-7 HCA

CN Anthraquinone, 1,8-diamino-4,5-bis(dimethylamino)- (6CI) (CA INDEX NAME)



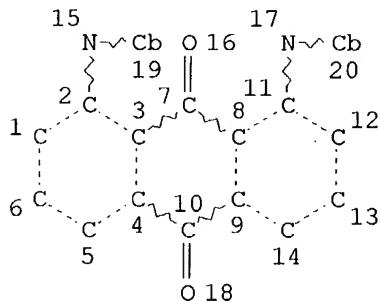
NCL 8M

CC 25 (Dyes and Textiles)

IT 101284-95-1, Anthraquinone, 4,5-diamino-1-dimethylamino-
 109248-63-7, Anthraquinone, 1,8-diamino-4,5-bis(dimethylamino)-
 109252-09-7, Anthraquinone, 1,5-diamino-4,8-bis(dimethylamino)-
 113324-54-2, Anthraquinone, 1,5-diamino-4,8-bis(diethylamino)-
 (manufacture of, and dyeing of acrylonitrile polymers therewith)

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L10 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS MCY SAT AT 19

GGCAT IS MCY SAT AT 20

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE

L18 12 SEA FILE=REGISTRY SSS FUL L10

L19 11 SEA FILE=HCA ABB=ON PLU=ON L18

L20

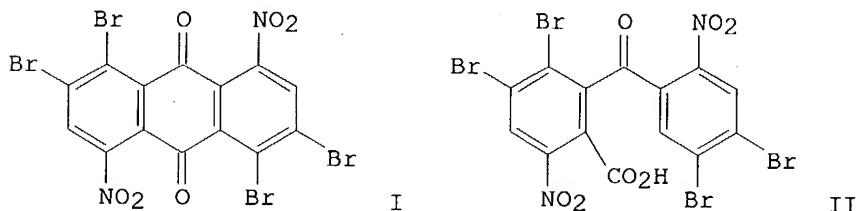
11 SEA FILE=HCA ABB=ON PLU=ON L19 AND 1907-2003/PY,PRY

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L20 ANSWER 1 OF 11 HCA COPYRIGHT 2004 ACS on STN

121:8774 Bromination of 1,5-dinitroanthraquinone. Popov, S. I.; Kopylova, T. M.; Andrievskii, A. M.; Avidon, S. V.; Tafeenko, V. A. (Nauchno-Issled. Inst. Org. Poluprod. Krasitelei, Russia). Zhurnal Organicheskoi Khimii, 29(4), 798-805 (Russian) 1993. CODEN: ZORKAE. ISSN: 0514-7492.
OTHER SOURCES: CASREACT 121:8774.

GI



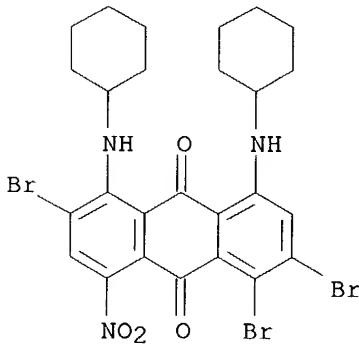
AB Bromination of 1,5-dinitroanthraquinone in H₂SO₄ containing HNO₃ was examined. The structure of the major product, 1,2,5,6-tetrabromo-4,8-dinitroanthraquinone (I), was determined by x-ray crystallog. and its reactivity was studied. Reaction of I with aromatic amines led to substitution of an α -Br atom, whereas reaction with aliphatic amines resulted at first in substitution of an α -Br atom, and secondly of a second Br atom or NO₂ group. Treating I with NH₃ under pressure gave 1,8-diamino-2,5,6-tribromo-4-nitroanthraquinone. Reduction of 1,2,5,6-tetrabromo-4,8-dinitroanthraquinone was accompanied by α -debromination to give 1,5-diamino-3,7-dibromoanthraquinone. Reactions of I with PhOK and MeOK also gave substitution products. Ring cleavage occurred when I was treated with KOH in dioxane to give 95% II.

IT 155338-89-9P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 155338-89-9 HCA

CN 9,10-Anthracenedione, 1,2,6-tribromo-4,5-bis(cyclohexylamino)-8-nitro-(9CI) (CA INDEX NAME)



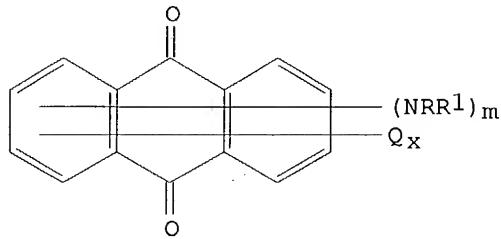
CC 25-6 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 75

IT 104-13-2P 88318-12-1P 151446-08-1P 155338-86-6P 155338-87-7P
 155338-88-8P **155338-89-9P** 155338-90-2P 155338-91-3P
 155338-92-4P 155338-93-5P 155338-94-6P 155338-98-0P 155338-99-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

L20 ANSWER 2 OF 11 HCA COPYRIGHT 2004 ACS on STN

109:139340 Pleochroic anthraquinone dyes and electrooptical displays therewith. Huffman, William A. (Minnesota Mining and Manufacturing Co., USA). U.S. US 4702561 A **19871027**, 19 pp. Cont.-in-part of U.S. Ser. No. 908,671, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1979-70421 19790828. PRIORITY: US 1977-786489 19770411; US 1978-908671 19780523.

GI



AB A composition for electrooptical imaging device comprises ≥ 1 nematic liquid crystal having dielec. pos. anisotropy and dissolved therein a pleochroic dye I [$O = F, Cl, NNO_2, NH_2$, alkylamino, OH; $x = 0-3$; $m = 1$ or 2 ; $R = H$; $R_1 = cyclohexyl$, bicyclohexyl, or $(CH_2)_p R_2$; $p = 0-2$; $R_2 = C_6-10$ aryl substituted at 4 position by $NHCOCH_3$, CN, alkyl, alkyloxy, cyclohexyl, 4-alkylcyclohexyl, or $Z_1-p-C_6H_4-Z$ where $Z_1 = CH_2, O, S, OCH_2$; $n = 0-1$; $Z = H, NO_2, CN, alkyl, alkyloxy, F, Cl$, and when $n = 0$, Z can also be Ph, and R_2 can be substituted in 0-2 further positions by CN, alkyl, alkyloxy, NH_2 , or OH provided that when p is 1 or 2 R_2 can be unsubstituted; when $m = 2$ the substituents R and R_1 taken together with N can alternatively be $NCH-p-C_6H_4-X$ where $X = NO_2, CN, alkyl, alkyloxy, C_1-8 dialkylamino$; $n = 1-20$; $b = 2-20$ provided that when p is 1 or 2 b can be 1-20]. An electrooptical imaging device by using the above composition is also claimed. The above guest-host combination is capable of producing. Thus, 1,4-diaminoanthraquinone was reacted with p-octyloxybenzaldehyde to produce 1,4-bis(p-octyloxybenzylidene amino)anthraquinone (II) (m.p. 280°). The display cell produced by using a nematic liquid crystal composition having pos. anisotropy and II had optical order parameter 0.93.

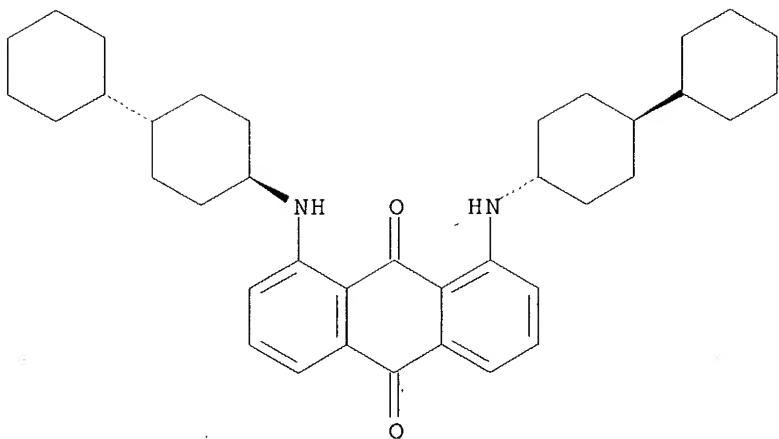
IT **116403-40-8P**

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and use of, as pleochroic dye in liquid crystal composition for display devices)

RN 116403-40-8 HCA

CN 9,10-Anthracenedione, 1,8-bis([1,1'-bicyclohexyl]-4-ylamino)-, [trans(trans)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.



IC ICM C09K019-00
ICS G02F001-13

NCL 350349000

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 41

IT 128-80-3P 15830-97-4P 23941-48-2P 42887-23-0P 55345-44-3P
70714-75-9P, 1,4-Bis(p-cyclohexylphenyl amino)anthraquinone 71334-59-3P
73592-48-0P 73592-51-5P 73592-52-6P 73592-54-8P 73592-55-9P
73592-56-0P 73592-57-1P 73592-59-3P 73592-60-6P 73592-61-7P
73592-62-8P 73592-63-9P 73592-64-0P 73592-65-1P 73592-66-2P
73592-68-4P 73592-69-5P 73592-70-8P 73592-71-9P 73592-73-1P
73592-74-2P 73598-76-2P 73598-77-3P 73598-78-4P 73598-79-5P
84976-90-9P 107564-83-0P 116310-67-9P 116310-68-0P 116310-69-1P
116310-70-4P 116310-71-5P 116310-72-6P 116310-73-7P 116310-74-8P
116310-75-9P 116310-76-0P 116310-77-1P 116310-78-2P 116310-79-3P
116310-80-6P 116310-81-7P 116310-82-8P 116310-83-9P 116310-84-0P
116310-85-1P 116310-86-2P 116310-87-3P 116310-88-4P 116310-89-5P
116310-90-8P 116310-91-9P 116310-93-1P 116310-94-2P 116323-44-5P
116329-91-0P 116403-39-5P **116403-40-8P**

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation and use of, as pleochroic dye in liquid crystal composition for display devices)

L20 ANSWER 3 OF 11 HCA COPYRIGHT 2004 ACS on STN

109:7999 4,5-Amino and thioether derivatives of 1,8-dihydroxyanthraquinone.

Peters, A. T. (Postgrad. Sch. Chem. Technol., Univ. Bradford, Bradford, BD7 1DP, UK). Dyes and Pigments, 9(3), 167-85 (English)

1988. CODEN: DYPIDX. ISSN: 0143-7208. OTHER SOURCES: CASREACT
109:7999.

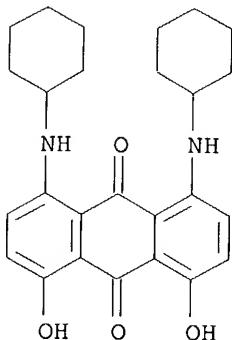
AB The synthesis of a series of N-alkyl- and N-aryl-1,8-dihydroxy-4,5-diaminoanthraquinones was described. These compds. dyed polyester fibers in blue to bluish-green hues of good fastness properties. N,N'-Disubstituted derivs. were less satisfactorily colorants but, in admixt. with the N-substituted derivs., good coloration could be achieved. The effect of replacing the amino groups in these dyes by aryl thioether substituents was reported, and the substituent effect on the color of the dyes was evaluated.

IT **114831-90-2P**

RL: SPN (Synthetic preparation); PREP (Preparation)

RN 114831-90-2 HCA
 CN 9,10-Anthracenedione, 1,8-bis(cyclohexylamino)-4,5-dihydroxy- (9CI) (CA INDEX NAME)

(preparation of, as dyes for polyester fibers)



CC 41-4 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
 IT 2478-73-1P 33299-02-4P 51866-43-4P 51866-44-5P 52740-99-5P
 55851-03-1P 56524-76-6P 56524-77-7P 114732-32-0P 114766-41-5P
 114831-88-8P 114831-89-9P **114831-90-2P** 114831-91-3P
 114831-92-4P 114831-93-5P 114831-94-6P 114831-95-7P 114831-96-8P
 114831-97-9P 114831-98-0P 114831-99-1P 114832-00-7P 114832-01-8P
 114832-02-9P 114832-03-0P 114832-04-1P 114832-05-2P 114832-06-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, as dyes for polyester fibers)

L20 ANSWER 4 OF 11 HCA COPYRIGHT 2004 ACS on STN
 105:124355 Liquid crystal compositions containing anthraquinone compounds.
 Miura, Konoe; Ozawa, Tetsuo; Iwanami, Junko (Mitsubishi Chemical Industries Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 61030590 A2
19860212 Showa, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION:
 JP 1984-152629 19840723.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title compds. I and II (R = H, alkyl, alkoxy, halo; R1 = H, alkyl, cycloalkyl, aryl, aralkyl, tetrahydrofurfuryl) are useful in liquid crystal compns. The compds. are optically stable and have excellent solubility in liquid crystals. Thus, refluxing 2-O2NC6H4SH and anthraquinone (III) for 1 h gave I (R = H; R1 = C6H4Bu-4) (IV). A display device prepared by using a cyanoctylbiphenyl liquid crystal composition containing 0.5% IV was irradiated by a GaAlAs semiconductor laser beam to give black images with excellent contrast.

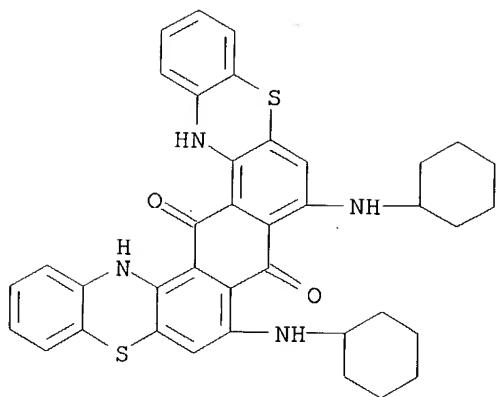
IT **104047-64-5 104047-65-6 104077-35-2**

RL: USES (Uses)

(liquid crystal compns. containing, for laser-recordable displays)

RN 104047-64-5 HCA

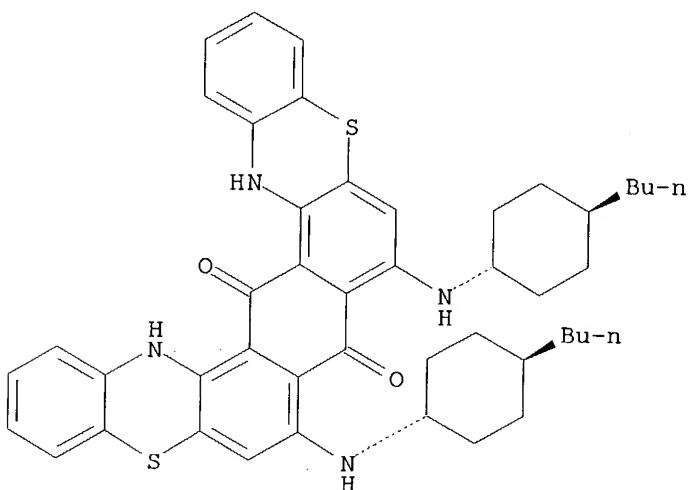
CN 8H,16H-Benzo[1,2-a:5,4-a']diphenothiazine-8,17(18H)-dione,
 7,9-bis(cyclohexylamino)- (9CI) (CA INDEX NAME)



RN 104047-65-6 HCA

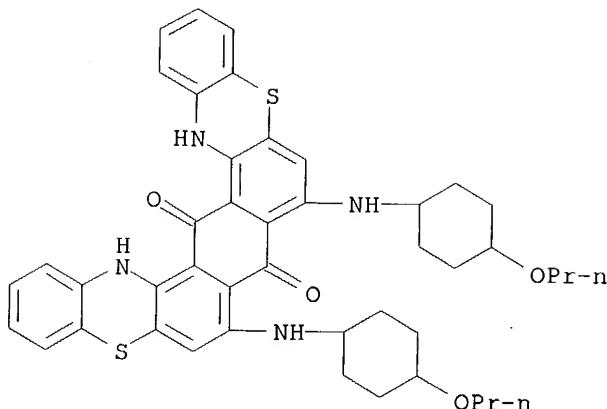
CN 8H,16H-Benzo[1,2-a:5,4-a']diphenothiazine-8,17(18H)-dione,
7,9-bis[(4-butylcyclohexyl)amino]-, [trans(trans)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 104077-35-2 HCA

CN 8H,16H-Benzo[1,2-a:5,4-a']diphenothiazine-8,17(18H)-dione,
ar,ar'-dichloro-7,9-bis[(4-propoxycyclohexyl)amino]-, [trans(trans)]-
(9CI) (CA INDEX NAME)



2 (D1-C1)

IC ICM C07D513-04
 ICS C09K019-54

ICA C09B005-44; G02F001-13; G09F009-35

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 28, 75

IT	104047-55-4	104047-56-5	104047-57-6	104047-58-7	104047-59-8
	104047-60-1	104047-61-2	104047-62-3	104047-63-4	104047-64-5
	104047-65-6	104047-66-7	104047-67-8	104047-68-9	
	104047-70-3	104049-86-7	104063-34-5	104063-35-6	104063-36-7
	104063-37-8	104063-38-9	104063-39-0	104063-40-3	104063-41-4
	104063-42-5	104063-43-6	104063-44-7	104063-45-8	104063-46-9
	104077-35-2	104077-36-3	104077-37-4	104077-38-5	
	104100-39-2				

RL: USES (Uses)

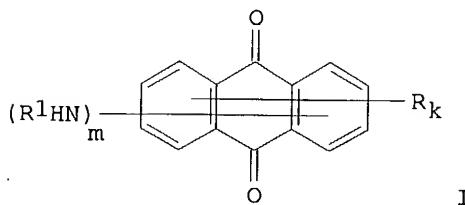
(liquid crystal compns. containing, for laser-recordable displays)

L20 ANSWER 5 OF 11 HCA COPYRIGHT 2004 ACS on STN

92:224308 Liquid crystal systems and electrooptical indicators. Huffman, William A. (Minnesota Mining and Manufacturing Co., USA). Ger. Offen. DE 2920730 19791129, 31 pp. (German). CODEN: GWXXBX.

APPLICATION: DE 1979-2920730 19790522.

GI



AB A pleochroic dye which is highly soluble (0.01-50 weight%) in nematic liquid crystals with pos. dielec. anisotropy and which can be used to produce

electrooptical displays with high color contrast between the on- and off-modes has the formula I [R = F, Cl, NO₂, NH₂, OH, or C₁₋₈ alkylamine; k = 0-3; R₁ = cyclohexyl, bicyclohexyl, or (CH₂)_pR₂ where p = 0-2 and R₂ = C₆₋₁₀ aryl where in the 4-position are NHCOMe, CN, C_nH_{2n+1}, OC_nH_{2n+1}, cyclohexyl, 4-C₁₋₈ alkylcyclohexyl, or ZqC₆H₄R_{3-p} (q = 0 or 1; Z = CH₂, O, S, or OCH₂; R₃ = H, NO₂, CN, C_nH_{2n+1}, OC_nH_{2n+1}, F, Cl, or (when q = 0) Ph), m = 1-2; and in ≤2 positions are CN, C_nH_{2n+1}, OC_nH_{2n+1}, NH₂, or OH where n = 1-20]. Thus, 1,5-dichloroanthraquinone 5 was added to 4-amino-1-cyclohexylbenzene 20 with NaOAc 5 and Cu 0.1 part and refluxed 2 h to give 1,5-bis(4-cyclohexylphenyl)anthraquinone (II). II 10mg was added to a mixture 1.0g of pentylphenylcyclohexyl cyanide 35.9, propylphenylcyclohexyl cyanide 36.1, and heptylphenylcyclohexyl cyanide 24.1 and pentylphenylcyclohexyl diphenyl cyanide 13.9%. The mixture apprx. 50mg was added to a nematic mixture 0.5g at 65° and placed between 2 5 + 7 cm and 5-mm thick glass plates coated with In oxide activated with Zr oxide and contacted with 2 5-cm long polytetrafluoroethylene strips. Cholesteryl nonanoate 0.1-50 weight% was added and a switching voltage of 0.8-10 V applied to give a color change from red to clear.

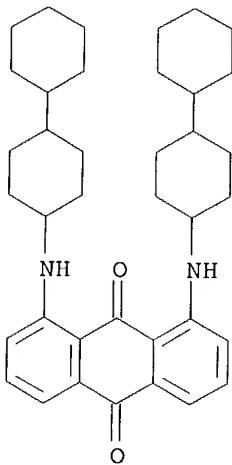
IT 73592-58-2

RL: USES (Uses)

(electrooptical display devices containing, liquid-crystal, with improved color contrast)

RN 73592-58-2 HCA

CN 9,10-Anthracenedione, 1,8-bis([1,1'-bicyclohexyl]-4-ylamino)- (9CI) (CA INDEX NAME)



IC C09K003-34; G02F001-13

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic Processes)
Section cross-reference(s): 73, 75, 76

IT 15830-97-4	15958-69-7	23941-48-2	42887-23-0	55345-44-3
73592-46-8	73592-47-9	73592-48-0	73592-49-1	73592-50-4
73592-51-5	73592-52-6	73592-53-7	73592-54-8	73592-55-9
73592-56-0	73592-57-1	73592-58-2	73592-59-3	73592-60-6
73592-61-7	73592-62-8	73592-63-9	73592-64-0	73592-65-1
73592-66-2	73592-67-3	73592-68-4	73592-69-5	73592-70-8
73592-71-9	73592-72-0	73592-73-1	73592-74-2	73598-76-2
73598-77-3	73598-78-4	73598-79-5		

RL: USES (Uses)

(electrooptical display devices containing, liquid-crystal, with improved color contrast)

L20 ANSWER 6 OF 11 HCA COPYRIGHT 2004 ACS on STN

84:67728 Infrared transmitting filter containing 1,4,5,8-tetracyclohexylaminoanthraquinone. Tucker, Robert J. (American Cyanamid Co., USA). U.S. US 3926835 19751216, 4 pp. (English). CODEN: USXXAM. APPLICATION: US 1973-368385 19730608.

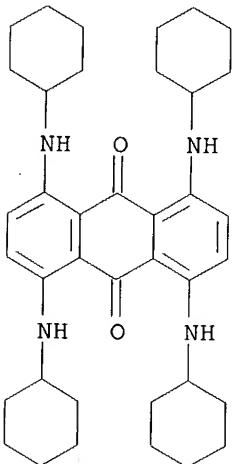
AB Optical filters made by incorporating organic dyes along with 1,4,5,8-tetracyclohexylaminoanthraquinone(I) have a maximum transmission of apprx.2% in the region up to .apprx.700 m μ and a transmission of at least .apprx.50% and generally 85-90% in the regions from .apprx.700 to .apprx.1200 m μ . Thus, a mixture of VYNW-5 (a copolymer of 97% vinyl chloride and 3% vinyl acetate) 10 g and THF solvent to a total volume of 100 ml. was stirred until all the polymer dissolved. Then dioctyl phthalate (plasticizer) 2, C.I. Acid Green 25 0.0375, C.I. Disperse Red 9 0.0328, C.I. Solvent Violet 13 0.0244, C.I. Solvent Yellow 14 0.0132, Direct Dye C.I. 28705 0.0105, and I 0.0100 g were added with stirring. A portion of the resulting solution was then poured onto a glass plate and drawn down into a film which was dried. The transmission curve of this 3.9-mil thick dark violet film indicates that it is substantially opaque to visible light, but exhibits a sharp rise in transmittance at 650-700 m μ and high transmittance at 700-1200 m μ .

IT 28634-38-0

RL: PRP (Properties)
(ir-transmitting filter containing)

RN 28634-38-0 HCA

CN 9,10-Anthracenedione, 1,4,5,8-tetrakis(cyclohexylamino)- (9CI) (CA INDEX NAME)



IC G02B

NCL 252300000

CC 73-8 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other Optical Properties)

IT 81-48-1 82-38-2 842-07-9 4403-90-1 5852-28-8 9003-22-9

28634-38-0

RL: PRP (Properties)
(ir-transmitting filter containing)

L20 ANSWER 7 OF 11 HCA COPYRIGHT 2004 ACS on STN

82:100075 Anthraquinone dyes. Reubke, Karl J.; Herzog, Helmut; Hohmann, Walter; Bien, Hans S. (Bayer A.-G.). Ger. Offen. DE 2327013

19741212, 29 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1973-2327013 19730526.

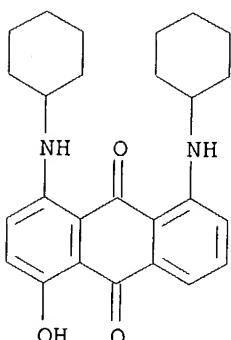
GI For diagram(s), see printed CA Issue.
 AB Anthraquinone dyes (I, R = H, Br; R1 = MeOC₆H₄, Ph, HOCH₂H₄, PhCH₂CH₂, Me₂CH, p-H₂NC₆H₄, p-AcNHC₆H₄, p-MeC₆H₇SO₂, Bz, Z = NH, S) or their mixts. were prepared and were used for dyeing acetate, polyamide, and polyester fiber and for transfer printing of polyester fibers fast orange to blue shades. Thus, a mixture of 1,6-dinitroanthraquinone [1604-42-8] and 1,7-dinitroanthraquinone [1604-43-9] was heated with CaO in tetramethylenesulfone at 180-90° for 5 hr to give a mixture of the 1-hydroxy-6- and 7-nitroanthraquinone, bromination of the mixture gave a mixture of 1-hydroxy-4-bromo-6- and 7-nitroanthraquinone, and treatment of this mixture with p-anisidine [104-94-9] in the presence of CuCl gave a mixture of 1-hydroxy-4-(p-anisidino)-6-nitroanthraquinone [54497-14-2] and 1-hydroxy-4-(p-anisidino)-7-nitroanthraquinone [54497-09-5]. The other I were similarly prepared

IT **54390-38-4P**

RL: IMF (Industrial manufacture); PREP (Preparation)
 (preparation of)

RN 54390-38-4 HCA

CN 9,10-Anthracenedione, 4,5-bis(cyclohexylamino)-1-hydroxy- (9CI) (CA INDEX NAME)



IC C09B

CC 40-5 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)

IT 54390-36-2P 54390-37-3P **54390-38-4P** 54390-40-8P
 54390-41-9P 54390-42-0P 54390-43-1P 54390-44-2P 54390-46-4P
 54390-47-5P 54390-48-6P 54390-50-0P 54390-51-1P 54390-53-3P
 54497-08-4P

RL: IMF (Industrial manufacture); PREP (Preparation)
 (preparation of)

L20 ANSWER 8 OF 11 HCA COPYRIGHT 2004 ACS on STN

82:87701 Anthraquinone derivatives containing chloro, bromo and amino substituents, useful as dye intermediates. Kishi, Noboru; Kasai, Kiyoshige (Mitsubishi Chemical Industries Co., Ltd.). Jpn. Tokkyo Koho JP 49024563 B4 **19740624** Showa, 5 pp. (Japanese). CODEN: JAXXAD.

APPLICATION: JP 1969-100394 19691213.

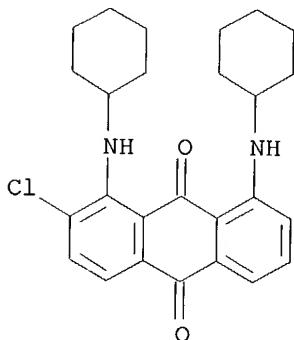
AB Chlorodiaminoanthraquinone derivs. were brominated to give di- or tribromochlorodiaminoanthraquinone derivs. useful as blue anthraquinone dye intermediates. For example, 2-chloro-1,5-diaminoanthraquinone [6313-43-5] in concentrate H₂SO₄ was treated with Br to give 2-chloro-1,5-diamino-4,8-dibromoanthraquinone [54176-44-2], reddish orange in pyridine solution; 7 other intermediates were obtained.

IT **54176-40-8**

RL: RCT (Reactant); RACT (Reactant or reagent)
(bromination of)

RN 54176-40-8 HCA

CN 9,10-Anthracenedione, 2-chloro-1,8-bis(cyclohexylamino)- (9CI) (CA INDEX NAME)

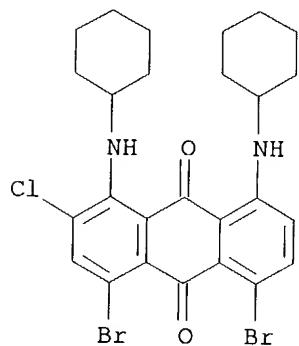


IT **54176-50-0P**

RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of)

RN 54176-50-0 HCA

CN 9,10-Anthracenedione, 4,5-dibromo-2-chloro-1,8-bis(cyclohexylamino)- (9CI)
(CA INDEX NAME)



IC C09B

CC 40-10 (Dyes, Fluorescent Whitenning Agents, and Photosensitizers)
Section cross-reference(s): 26

IT 6313-43-5 54176-38-4 54176-39-5 **54176-40-8** 54176-41-9
54176-42-0 54176-43-1

RL: RCT (Reactant); RACT (Reactant or reagent)
(bromination of)

IT 54176-44-2P 54176-45-3P 54176-46-4P 54176-47-5P 54176-48-6P
54176-49-7P **54176-50-0P** 54241-24-6P 54241-25-7P

RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of)

L20 ANSWER 9 OF 11 HCA COPYRIGHT 2004 ACS on STN

74:13913 Plastic filter for protection from laser radiation. Tucker, Robert J.; Hosler, John F. (American Cyanamid Co.). Ger. Offen. DE 2012969
19700924, 16 pp. (German). CODEN: GWXXBX. PRIORITY: US
19690318.

AB Plastic lenses or filters for protecting the eyes against the deleterious

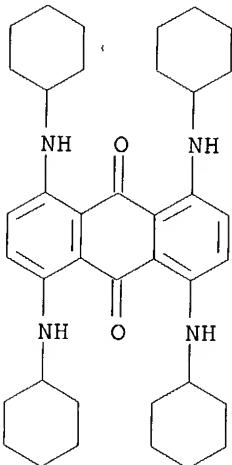
effects of laser radiation have a visual transparency of $\geq 15\%$ and contain enough of a radiation-absorbing compound to give an optical d. ≥ 3 at the wavelength of the radiation. Thus, a lens casting composition was prepared by ball-milling poly(Me methacrylate) 1000, 1,4,5,8-tetrakis(cyclohexylamino)anthraquinone 0.4, and 2,2'-dihydroxy-4-methoxybenzophenone 0.5 g, drying at 70° , and injection molding into lenses 2.5 mm thick. The products had an optical d. of 3.88 at the wavelength of a ruby laser, and a visual transparency of 50%. These lenses are easy to prepare, and have good visibility characteristics.

IT 28634-38-0

RL: DEV (Device component use); USES (Uses)
(lenses containing, for shielding against laser radiation)

RN 28634-38-0 HCA

CN 9,10-Anthracenedione, 1,4,5,8-tetrakis(cyclohexylamino)- (9CI) (CA INDEX NAME)



IC C08F

CC 37 (Plastics Fabrication and Uses)

IT 118-75-2, uses and miscellaneous 131-53-3 842-07-9 5496-71-9

28634-38-0 30470-68-9 30470-69-0

RL: DEV (Device component use); USES (Uses)
(lenses containing, for shielding against laser radiation)

L20 ANSWER 10 OF 11 HCA COPYRIGHT 2004 ACS on STN

65:39193 Original Reference No. 65:7356e-g Dyeing of synthetic textiles.

Crotti, Argento (A.C.N.A.-Aziende Colori Nazionali Affini S.p.A.). FR 85557 19650903, 3 pp.; Addn. to Fr. 1,257,940 (Unavailable).

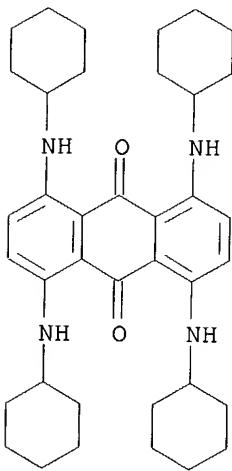
PRIORITY: IT 19630403.

GI For diagram(s), see printed CA Issue.

AB On polyolefin fibers anthraquinone disperse dyes (I), where X = H, halogen, alkyl, OH, OR, SR, SO₂R, CN, CONH₂, NH₂, or NHR, have good affinities and fastnesses. To prepare I (X = H), reflux 1,4,5,8-tetrachloroanthraquinone 10, cyclohexylamine 200, KOAc 8, and Cu(OAc)₂ 0.8 g. at 130° for several hrs. After completion dilute with 100 ml. EtOH, filter, wash with EtOH and H₂O at $50-60^\circ$. Recrystn. from EtOH yields a blue powder. Dyeing is performed by usual methods (30-90 min., 95-100°, rinse and wash).

IT 28634-38-0, Anthraquinone, 1,4,5,8-tetrakis(cyclohexylamino)- (derivs., for olefin polymer fiber dyeing)

RN 28634-38-0 HCA
 CN 9,10-Anthracenedione, 1,4,5,8-tetrakis(cyclohexylamino)- (9CI) (CA INDEX NAME)



IC C09B; D06P
 CC 47 (Textiles)
 IT 28634-38-0, Anthraquinone, 1,4,5,8-tetrakis(cyclohexylamino)-
 (derivs., for olefin polymer fiber dyeing)

L20 ANSWER 11 OF 11 HCA COPYRIGHT 2004 ACS on STN
 47:36355 Original Reference No. 47:6147f-i,6148a-b 1,4,5,8-Tetraaminoanthraquinones. Allen, Charles F. H.; Wilson, Charles V. (Eastman Kodak Co.). US 2611772 19520923 (Unavailable). APPLICATION: US .

AB 1,4,5,8-Tetra(substituted amino)-anthraquinones (I) are prepared. The I, which are useful for coloring gasoline and as filter dyes for absorbing infrared rays, are prepared by the reaction of an excess of suitable amines with the leuco form of a hydroxyanthraquinone in the absence of air, O₂, or oxidizing agents, and in the presence of N₂, H₂, or other inert gas, followed by oxidation with air. 1,4,5,8-Tetrakis(2-hydroxyethylamino)anthraquinone(II), m. 316-20° (from PhCH₂OH), is prepared in 90% crude yield by refluxing leuco 1,4,5,8-tetrahydroxyanthraquinone (III), NH₂CH₂CH₂OH, and H₂O for about 24 hrs. in an inert atmospheric and 24 hrs. in a current of air. II gives a greenish yellow

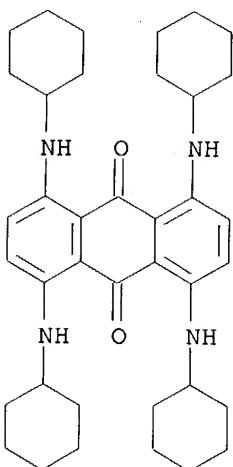
solution in H₂SO₄ and turns dull green on addition of boric acid. Similarly prepared are 1,4,5,8-tetrakis(amylamino)anthraquinone, m. 154-7° (from BuOH), from III and amyamine; 1,4,5,8-tetrakis(cyclohexylamino)anthraquinone, m. 200-5° (from pyridine(IV)-MeOH), from III and cyclohexylamine; 1,4,5,8-tetrakis(2-methoxyethylamino)anthraquinone, m. 198-200° (violet leaflets from C₆H₆), from III and 2-methoxyethylamine; 1,4,5,8-tetrakis(dodecylamino)anthraquinone, m. 121-2° (from IV), from III and dodecylamine; 1,4,5,8-tetrakis(octadecylamino)anthraquinone, m. 115° (from IV), from III and octadecylamine; 1,4,5,8-tetrakis(3,5,5-trimethylhexylamino)anthraquinone, m. 140° (blue needles from Me₂CO (V)), from III and 3,5,5-trimethylhexylamine; 1,4,5,8-tetrakis(3-dimethylaminopropylamino)anthraquinone, m. 119-22° (from V), from III and 3-dimethylaminopropyl amine; 1,4,5,8-tetrakis(carboxymethylamino)anthraquinone (no properties reported) from III and glycine;

1,4,5,8-tetrakis(1-carboxy-2-methylpropylamino)anthraquinone (no properties reported) from III and valine; 1,4,5,8-tetrakis(2-carboxyethylamino)anthraquinone (no properties reported) from III and β -alanine; 1,4,5,8-tetrakis(1,3-dicarboxypropylamino)anthraquinone (no properties reported) from III and glutamic acid; 1,4,5,8-tetrakis(phenethylamino)anthraquinone, m. 178° (from V), from III and phenethylamine; and 1,4,5,8-tetrakis(2-sulfoethylamino)anthraquinone (no properties reported) from III and taurine.

IT 28634-38-0, Anthraquinone, 1,4,5,8-tetrakis(cyclohexylamino)-
(preparation of)

RN 28634-38-0 HCA

CN 9,10-Anthracenedione, 1,4,5,8-tetrakis(cyclohexylamino)- (9CI) (CA INDEX NAME)



CC 25 (Dyes and Textiles Chemistry)

IT 28634-38-0, Anthraquinone, 1,4,5,8-tetrakis(cyclohexylamino)-
102758-79-2, Anthraquinone, 1,4,5,8-tetrakis(2-hydroxyethylamino)-
(preparation of)

=>